RCRA Case Development Inspection

BURKE-PARSONS-BOWLBY CORPORATION
Goshen Division
9223 Maury River Road
Post Office Box 86
Goshen, VA 24439

County: Rockbridge

EPA ID No. VAD005027560
SIC Code: 2491
NAICS Code: 321114

Date of Inspection: March 24, 2005

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Waste & Chemicals Management Division
April 8, 2005

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1.0 Introduction

On March 24, 2005, the United States Environmental Protection Agency, Region III (EPA), Waste and Chemicals Management Division, RCRA Compliance and Enforcement Branch conducted an unannounced Case Development Inspection (CDI) under the Resource Conservation and Recovery Act (RCRA), as amended, 42 U.S.C. Sections 6901 et seq. of Burke-Parsons-Bowlby Corporation (BPB or facility). USEPA representatives Jeanna Henry and Stacie Peterson were accompanied by Jed Pascarella from Virginia's Department of Environmental Quality (VADEQ). The facility was represented by Doug Gentry, Division Manager, and Joe Burton, Safety/Quality Control Manager. Mr. Gentry has been with BPB for a total of 28 years and in his current position for the past 3 ½ years, while Mr. Burton has been with the facility a total of 26 years.

The inspection team arrived to the facility at 10:00 am and met with Mr. Gentry and Mr. Burton in Mr. Gentry's office, where Ms. Henry and Ms. Peterson presented their credentials before beginning the inspection. The purpose of the CDI, which was a follow-up to a Compliance Evaluation Inspection (CEI) of BPB on April 8, 2004, was to provide EPA with an understanding of the facility's creosote wood treating processes and how condensate generated during the treatment processes is managed. In addition, the condition of the facility's drip pad, which included the surrounding berms/curb/apron, the management of used aerosol cans, and the hazardous waste storage area were also evaluated during the CDI.

All information included in this report are the results of statements made by the facility representatives, materials shown to the inspectors by the facility representatives during the inspection, information and documents provided by the facility representatives to EPA during or after the inspection, and a review of the facility's EPA and State records.

2.0 General Facility Information

BPB is a large creosote wood preserver located on an approximately 25 acre site in a rural area of west central Virginia. This is one of four facility's owned by Richard Bowlby and operated under the Burke-Parsons-Bowlby name. The other three facilities are located in Dubois, Pennsylvania; Spensor, West Virginia; and Stanton, Kentucky. Operations began at this location in the early 1950's. The facility operates a total of five treatment cylinders, designated as Treatment Cylinders No. 1, 2, 3, 4, and 5. At the time of EPA's April 2004 CEI, the facility was using four of the treatment cylinders to treat railroad, switch, and bridge ties made out of oak and other mixed hardwoods with creosote. The other treatment cylinder was being used to treat agricultural fence posts with chromated copper arsenate (CCA). However, according to Mr. Gentry the facility ceased the use of CCA as a treatment preservative in the fall of 2004. Now all five treatment cylinders are used solely for creosote treatment.

3.0 Creosote Wood Treating Process

BPB treats both air seasoned and green lumber with creosote, an oil-borne preservative. Air seasoning, a conditioning step to remove water from the wood, takes place prior to treatment and involves stacking the wood in a staggered formation to allow for air flow around the wood. The wood is placed in the storage yard for 9-12 months and allowed to dry. Whereas, the Boulton Process, described below, is conducted during the actual treatment process to remove water from green lumber that has not yet been conditioned.

Wood that is dry (i.e., air seasoned) and ready for treatment is placed onto trams and loaded into a treatment cylinder. An initial pressure is applied to the treatment cylinder and the amount of pressure depends on the species of wood to be treated. Following the initial pressure, the cylinder is completely filled with creosote, which is heated to approximately 180° F, and more pressure is applied. After the creosote has been pressured into the wood, the pressure is released, the creosote is drained from the cylinder, and a final vacuum is pulled to remove any excess preservative. The tram is then led out of the cylinder and the wood is allowed to drip on the drip pad until all drippage has ceased.

This process is slightly altered when the facility utilizes the Boulton Process to remove water from wood that has not been dried (i.e., green wood). Again, the wood is placed onto trams and loaded into a treatment cylinder. The cylinder is filled with creosote, leaving only a small head space in the cylinder. The creosote is heated and a vacuum is applied to the cylinder. By having the cylinder under a vacuum, the water in the wood will boil at a lower temperature, resulting in its vaporization. The vaporized water is pulled from the treatment cylinder. Once the water has been removed from the wood, the same process as described above is followed.

4.0 Management of Condensate

In order to further EPA's understanding of BPB's wood treating processes and the facility's management of the water generated during the Boulton Process, the inspectors focused on Treatment Cylinder No. 1 and its associated equipment (i.e., piping, surge tank, condenser, etc.). As stated above in Section 3.0, BPB utilizes the Boulton Process during the creosote treatment process to remove water from wood that has not been dried (i.e., green wood). The Boulton Process involves filling the treatment cylinder with creosote until the charges of wood are covered, leaving a small head space at the top of the cylinder. The creosote is then heated to approximately 180° F and a vacuum is applied to the cylinder. Because the cylinder is under vacuum, the free water in the wood is able to boil at a lower temperature, resulting in its vaporization and removal from the wood. Once the water has been vaporized, it is removed from the cylinder and directed through a "surge tank." Please refer to Photographs No. 1 and 2 included at Attachment A. The purpose of the surge tank is to keep preservative from being pulled into the facility's management system for the water vapor.

Following the surge tank, the water vapor is sent through a condenser (long cylinder

jacketed with cold water, Photographs No. 3-5), where it is changed back into liquid form and referred to as "condensate." The condensate is a mixture of water and creosote. The condensate is then collected in a "work tank" (Photograph No. 6) where the amount of condensate generated will be measured in order to determine the amount of water removed from the wood. The condensate is then directed from the work tank to an "evaporator" (Photographs No. 7-10). Each of the facility's five treatment cylinders has its own surge tank, condenser and work tank, except for Treatment Cylinders No. 3 and 5, which share a condenser. All condensate, which is generated daily by one or more of the five treatment cylinders, is directed to the facility's one evaporator unit. The condensate is transferred via hard piping to and from each of the units described above.

The facility's evaporator unit is a closed-top, 6,000 gallon tank. The evaporator unit is surrounded by an approximately 5' tall concrete wall which provides secondary containment. The bottom, inside of the tank is equipped with stainless steel coils (4-5 feet in length) that are heated with steam. The coils heat the condensate, which naturally separates into a water and oil layer, resulting in the water layer being boiled off and released to the atmosphere through a vent (Photograph No. 11) located at the top of the tank. According to Mr. Gentry, the facility was issued an air permit for this vent by VADEQ. Mr. Pascarella informed Ms. Henry that the VADEQ air permit writer is Janerden Pandey and the air inspector is Glen Diehl. Once the water layer of the condensate has been boiled off, the remaining oil layer is a reusable product, which is transferred to one of the facility's creosote product storage tanks.

5.0 Drip Pad

The facility's drip pad is located directly in front of the five treatment cylinders. It is covered and constructed of concrete with embedded rails for the trams that carry the wood into and out of the treatment cylinder (Photographs No. 12-14). During EPA's April 2004 CEI, it was noted that the facility's drip pad was covered with a build-up (1-2") of hardened creosote from the drippage that occurs when treated wood is removed from the treatment cylinders. It was also observed that a build-up of creosote was on the aprons (section of concrete on East, North and West sides of drip pad) of the drip pad. Following EPA's April 2004 CEI, it was unclear where the drip pad ended and the apron surrounding the drip pad began. In addition, EPA was unclear on whether or not the drip pad was surrounded by a berm or curb. During the CDI, Ms. Henry drew a diagram (Attachment B) of the drip pad to show the drip pad and surrounding apron, curbs, and berms. Photographs No. 15-24 show the drip pad from different angles to help show where the divide is between the actual drip pad and surrounding aprons, curbs, and berms.

Regarding the build-up of creosote on the drip pad and surrounding aprons, Mr. Burton stated that the facility has been scraping the drip on a monthly basis to remove any hardened creosote build-up. Mr. Gentry stated that the pad would be scrapped within the next 2 weeks for end of year maintenance. In addition, the drip pad is swept weekly and large pieces of debris are removed from the pad daily. The inspectors did note a small build-up of creosote on the drip pad during the CDI (Photographs No. 25 & 26).

6.0 Management of Used Aerosol Cans

At the time of EPA's April 2004 CEI the facility was using spray paint to mark the bundles of ties before and after treatment. When empty or no longer usable, the used aerosol cans of spray paint were then disposed of in the regular trash. The facility's management of used aerosol cans as regular trash was discussed during the closing with facility representatives during the April 2004 CEI as an area of concern since a waste determination on the used aerosol cans had not been conducted. Ms. Henry asked Mr. Gentry how the facility was now managing the used aerosol cans. He stated that after the April 2004 CEI the facility began to phase out the use of aerosol cans of spray paint and have began using paint sticks. However, as the remaining aerosol cans become empty or no longer usable they are still being disposed of in the regular trash.

7.0 Hazardous Waste Accumulation Area

The facility's less than 90-day hazardous waste accumulation area is located on the North-West side of the drip pad. The inspectors observed eleven (11) 55-gallon drums of hazardous waste. All of the drums were closed, in good condition, labeled with the words "Hazardous Waste," and marked with accumulation start dates, the oldest date being 1/3/05.

8.0 Attachments

A. Photographic Log
B. Diagram of Drip Pad

Attachment A

Photographic Log

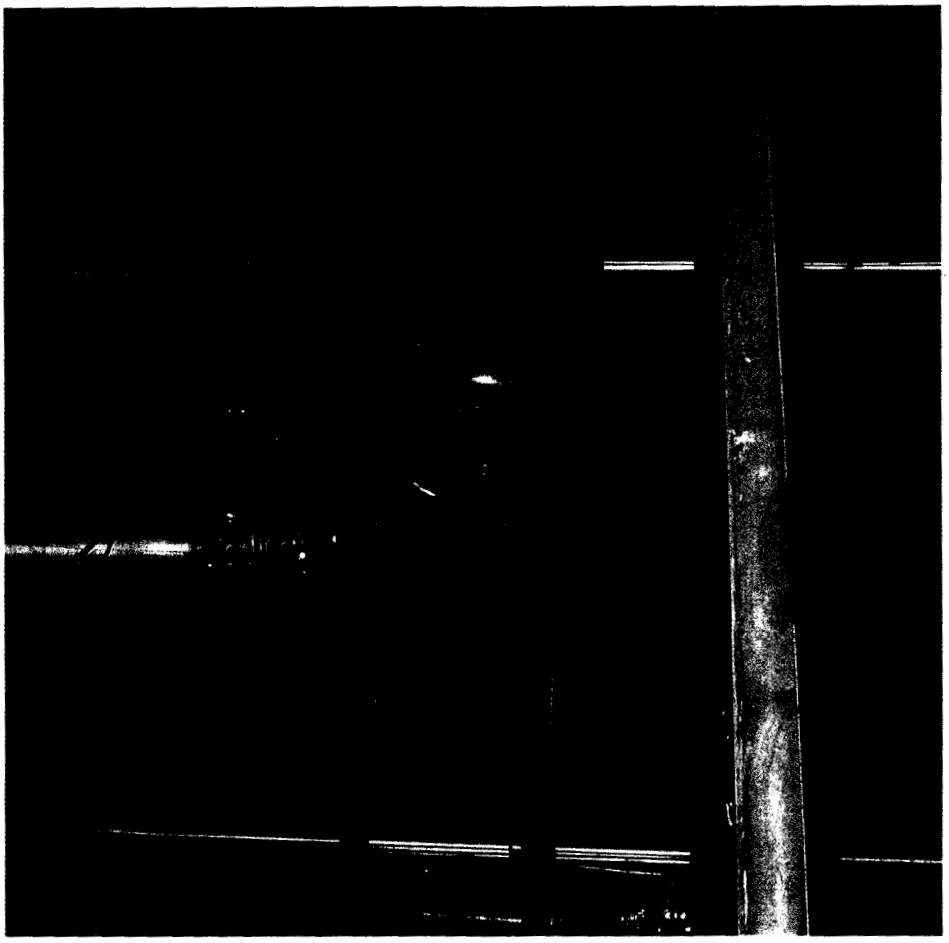
Photographic Log

BURKE-PARSONS-BOWLBY CORPORATION
Goshen Division
9223 Maury River Road
Post Office Box 86
Goshen, VA 24439

EPA ID No. VAD005027560

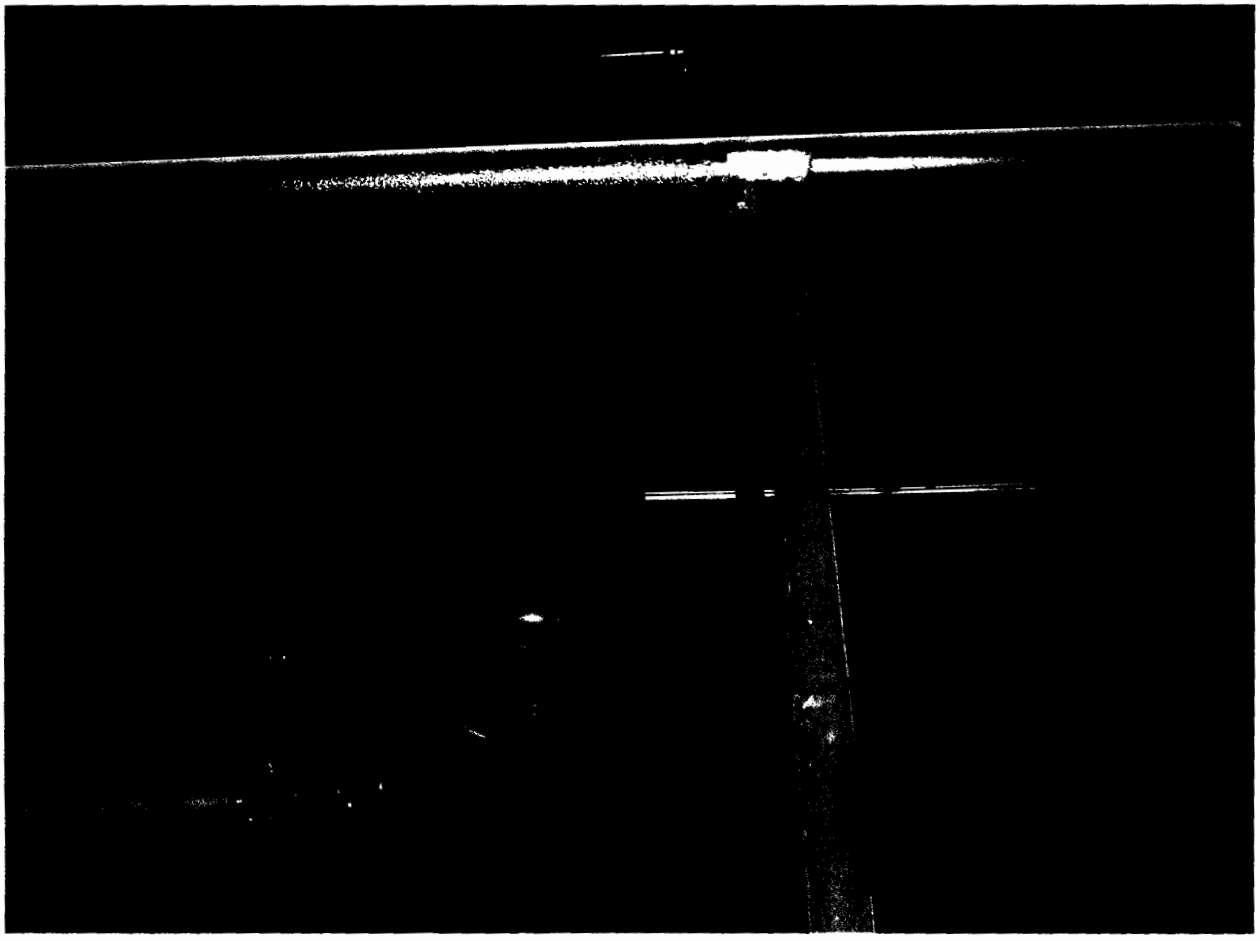
Date of Inspection: March 24, 2005

Photograph No. 1



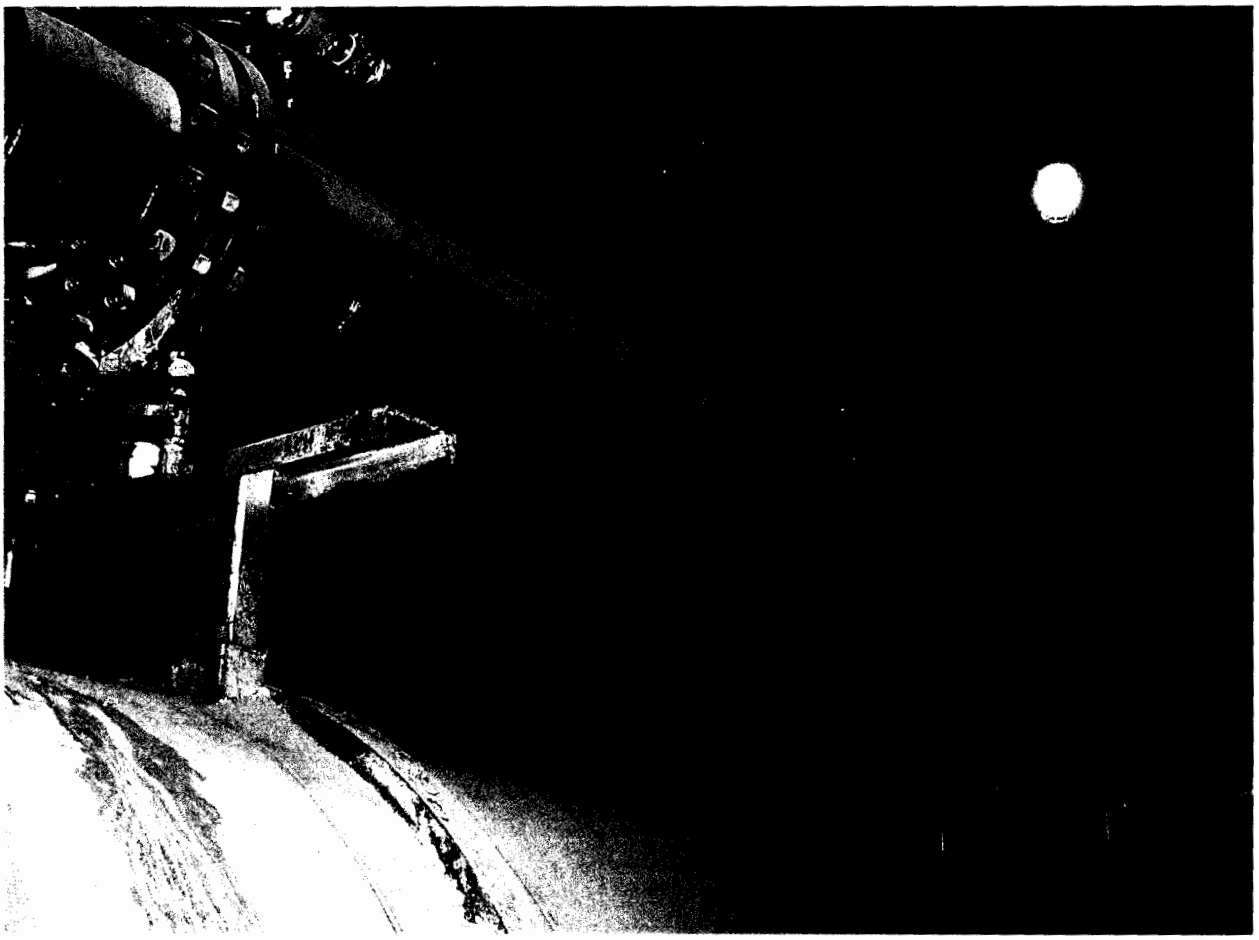
Surge Tank associated with Treatment Cylinder No. 1. As the water vapor is pulled from the treatment cylinder during the creosote treatment process, it is first directed through a surge tank. Mr. Gentry informed the inspectors that during the treatment process the creosote inside the cylinder may "surge" due to the pressures and vacuums applied. The surge tank is located above the treatment cylinder to ensure that product creosote cannot be pulled out with the water vapor.

Photograph No. 2



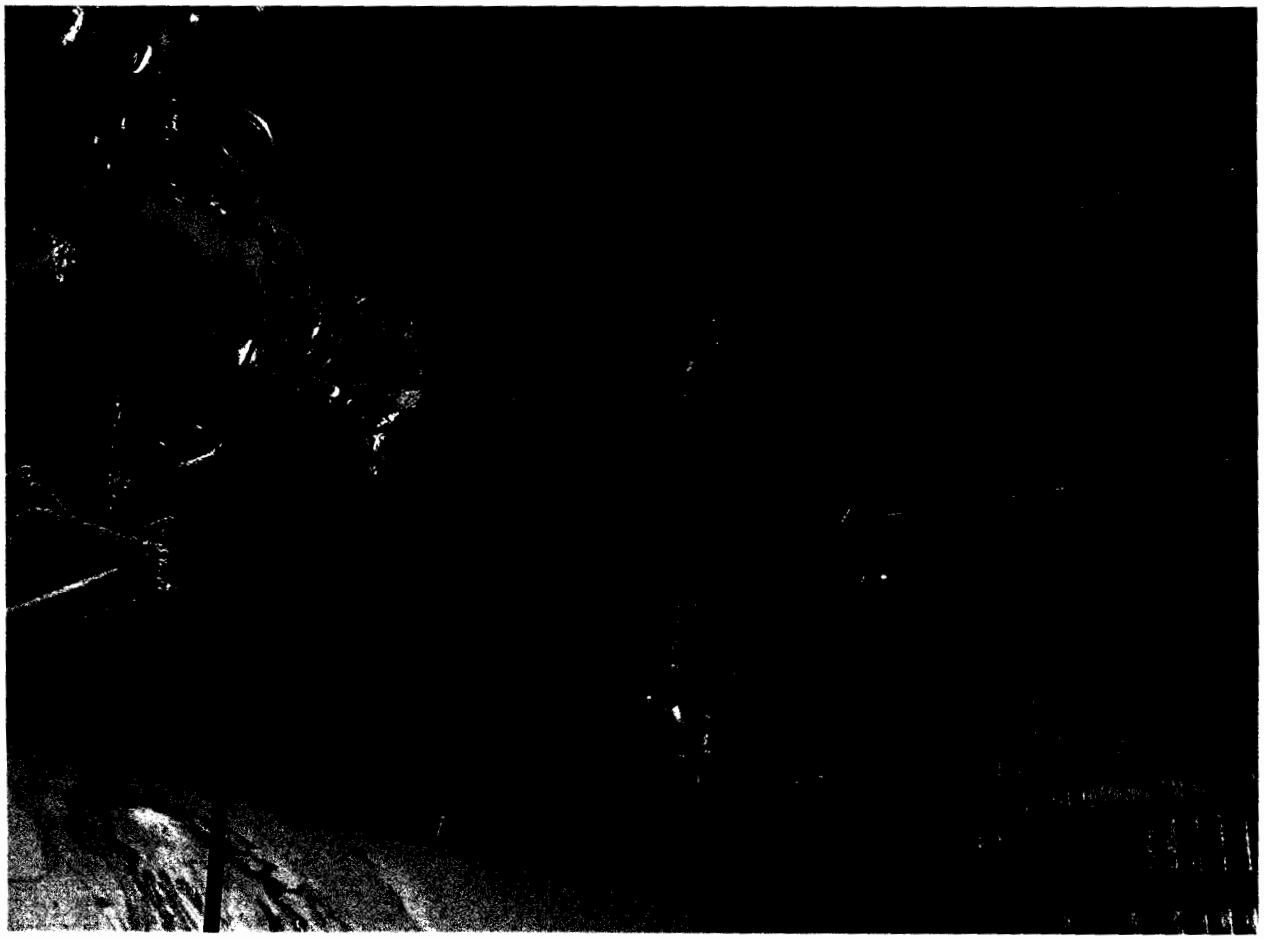
Surge Tank associated with Treatment Cylinder No. 1. Same description as Photograph No. 1.

Photograph No. 3



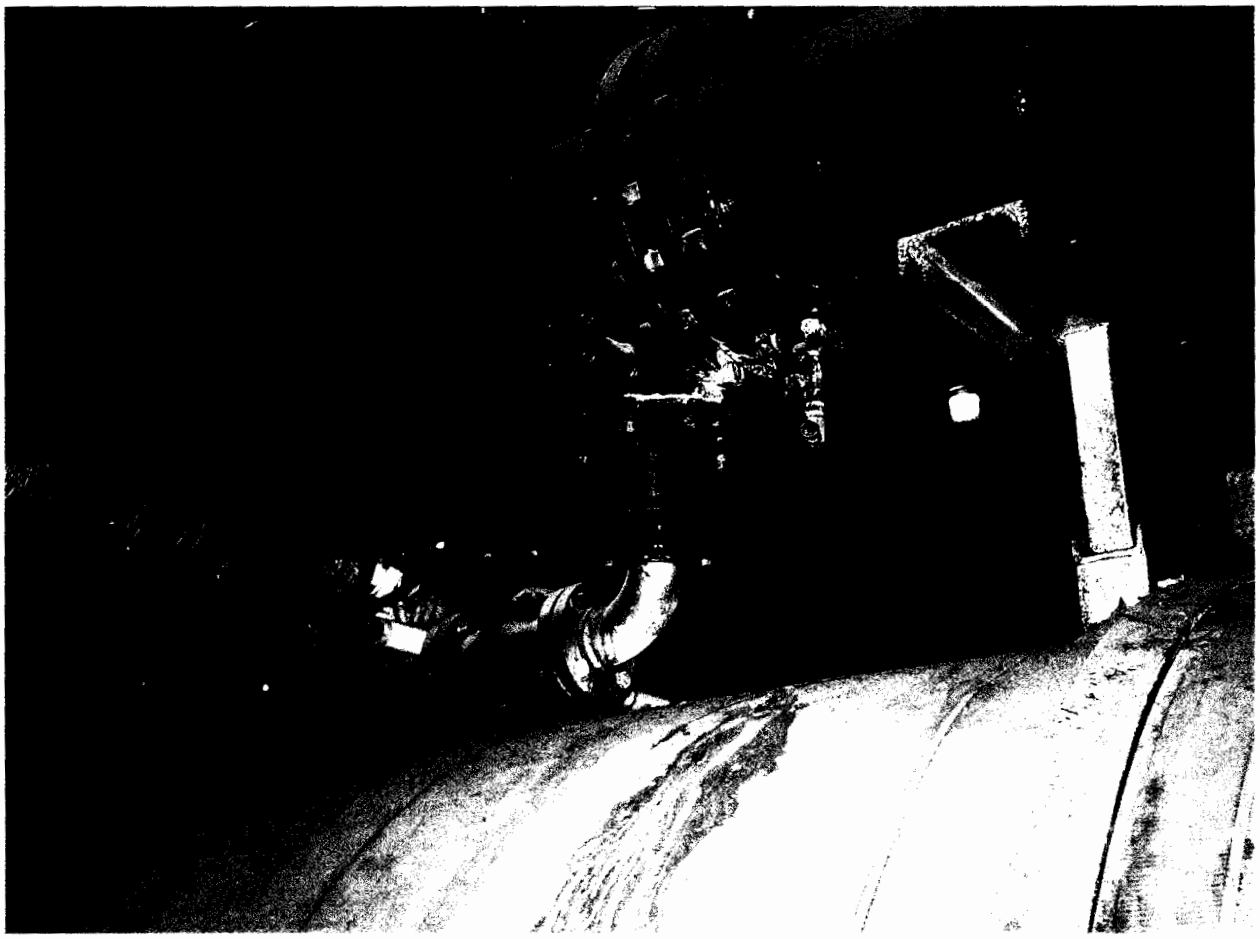
Condensor associated with Treatment Cylinder No. 1. After the water vapor has been directed through the surge tank, it is piped through a condensor, which is basically a steel pipe jacketed with cold water. The condensor cools the water vapor, changing it back into a liquid form. The condensed liquid is referred to as condensate and consists of an oil/water mixture.

Photograph No. 4



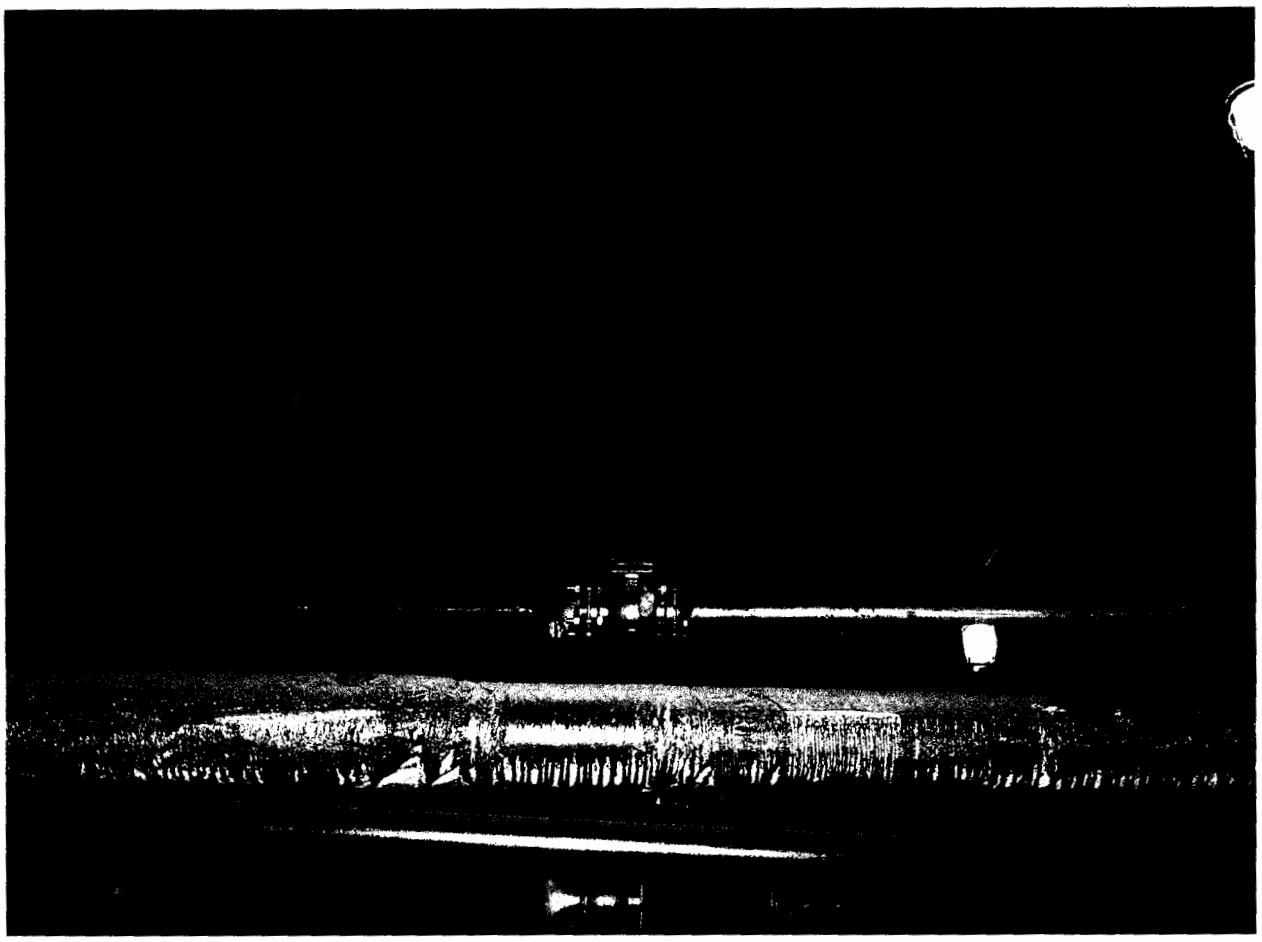
The piping painted brownish-red is coming from the surge tank and entering condensor associated with Treatment Cylinder No. 1. The silver piping coming out of wall contains the water vapor being pulled out of the treatment cylinder and is directing it to the surge tank associated with Treatment Cylinder No. 1.

Photograph No. 5



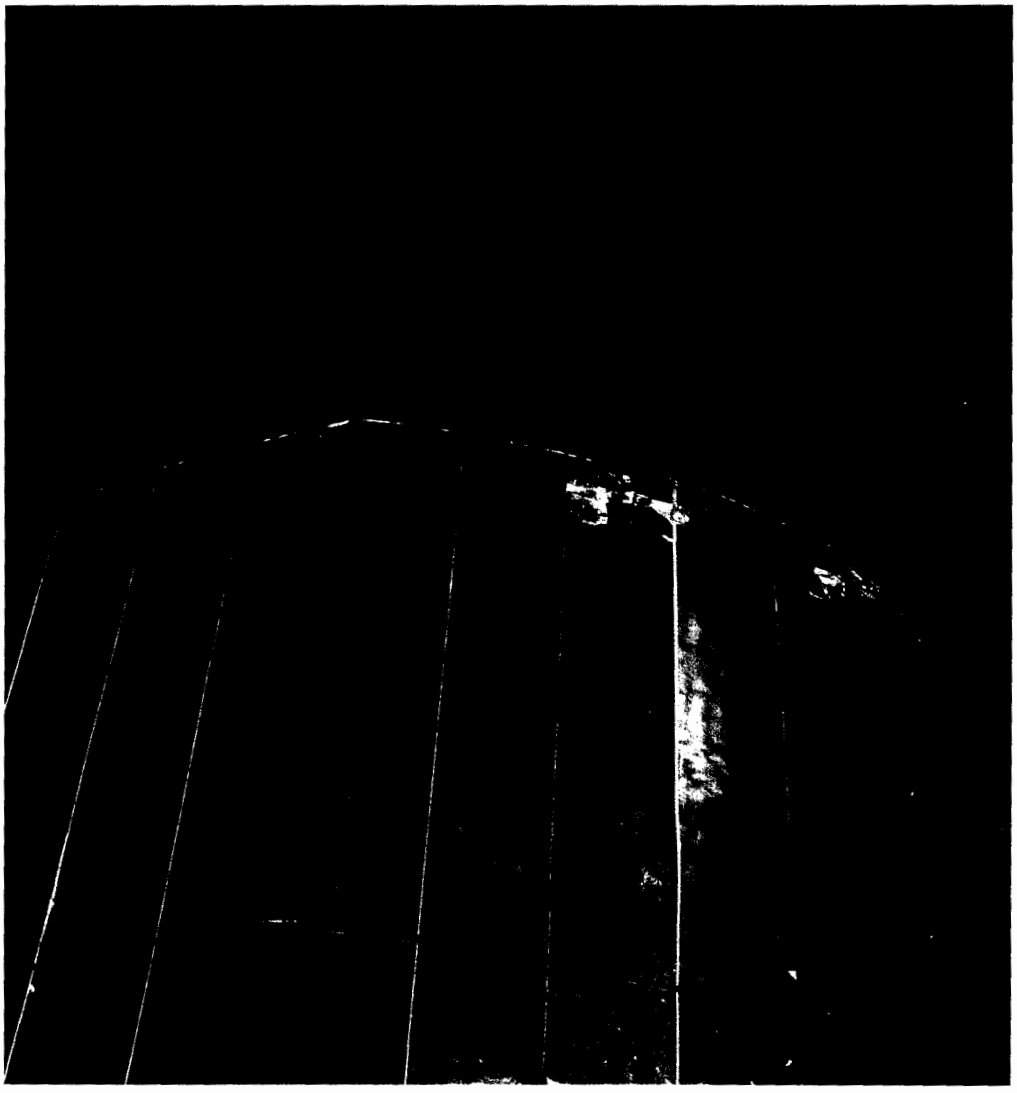
End of condensor associated with Treatment Cylinder No. 1. The condensate exits the condensor and is directed through hard piping to the work tank.

Photograph No. 6



Work Tank associated with Treatment Cylinder No. 1. Due to this area being dimly lit, the work tank is barely visible in this picture. Its outline can be seen behind the piping shown in this photograph.

Photograph No. 7

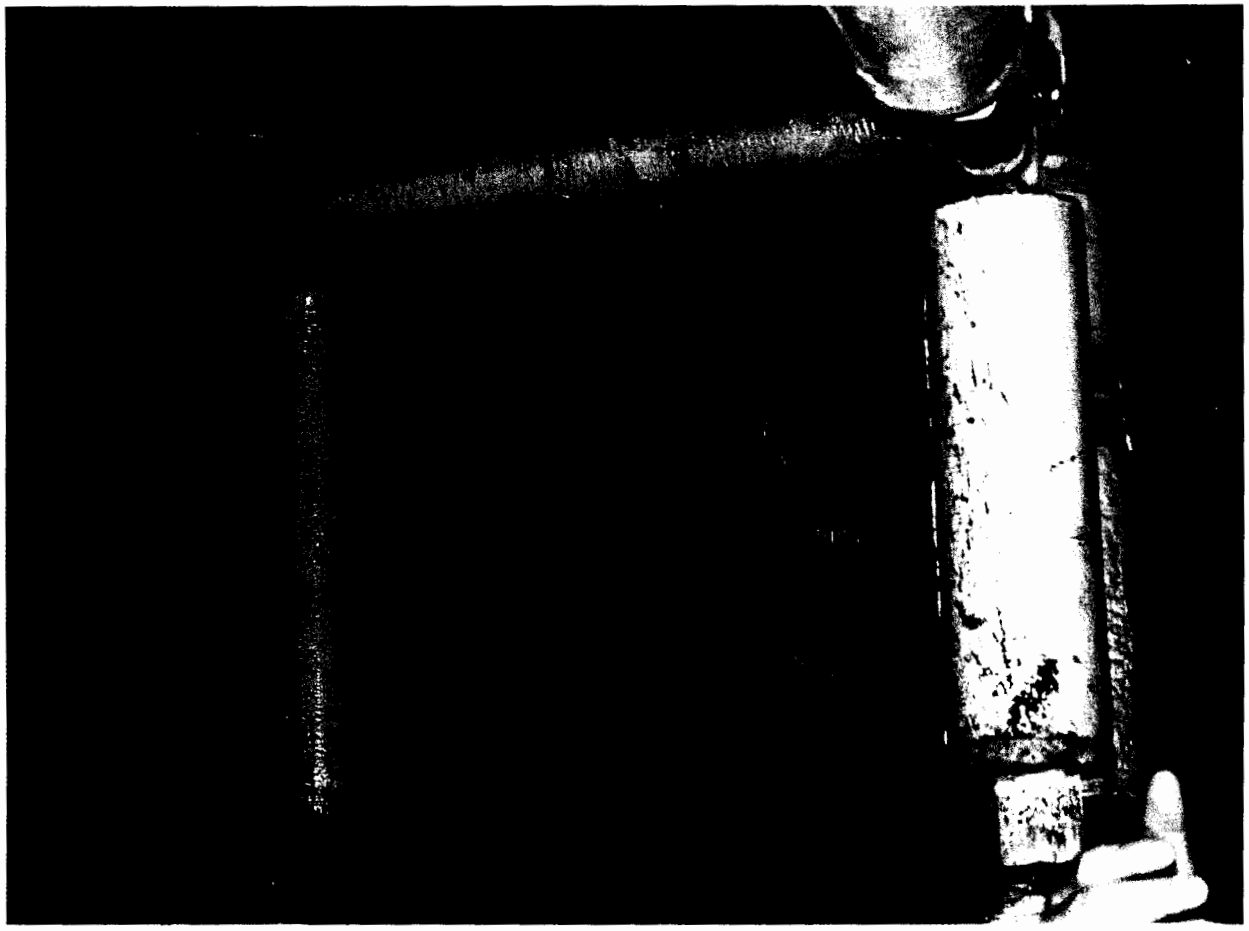


Evaporator Unit. The facility's evaporator unit is a 6,000 gallon closed-top tank. The tank appeared to be constructed of stainless steel.

Photograph No. 8

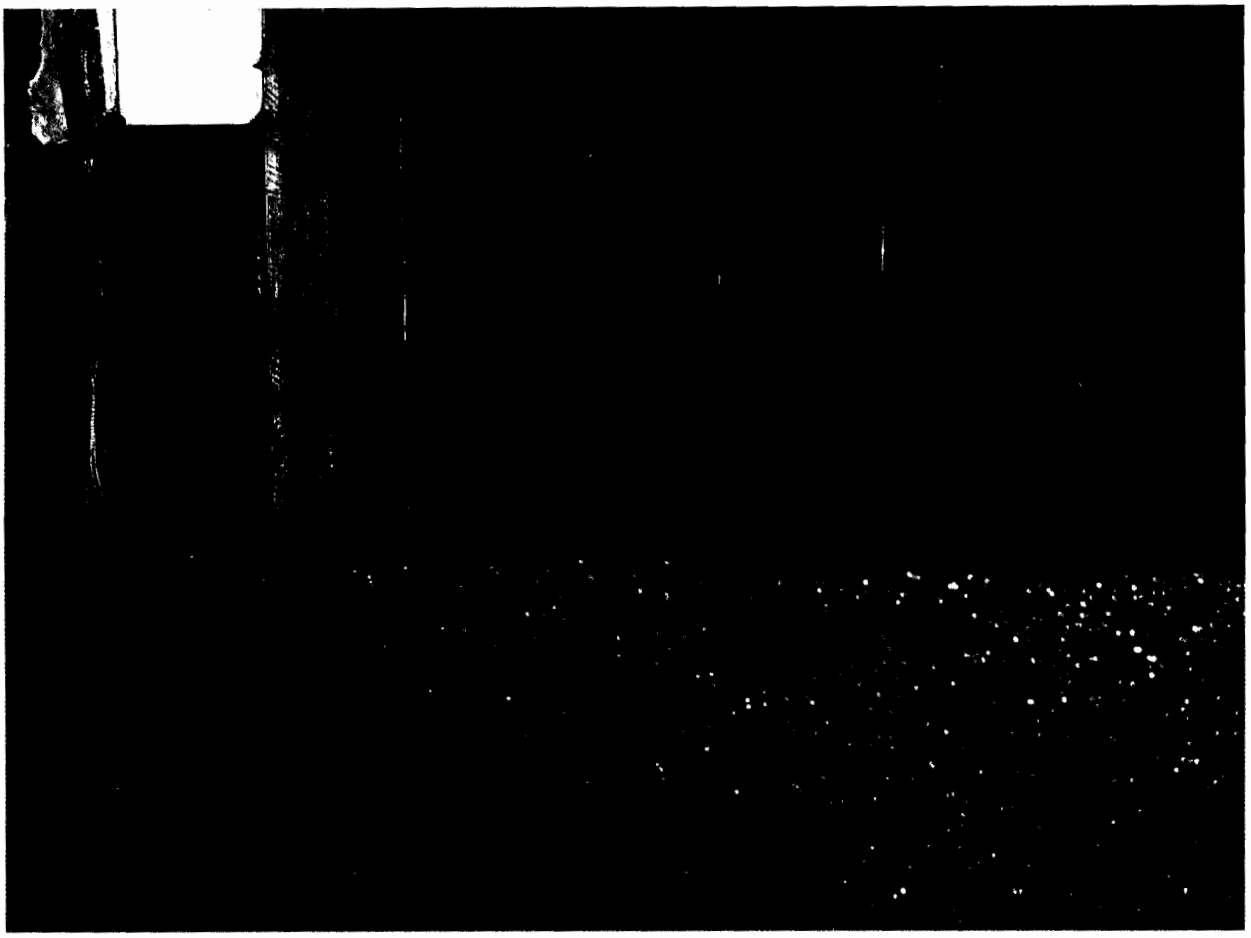
Evaporator Unit. Same description as Photograph No. 7. This photograph shows creosote that has spilled on the outside of the tank. The tank is also equipped with gauges to tell the volume of the tank, however, Mr. Gentry was unsure of their accuracy.

Photograph No. 9



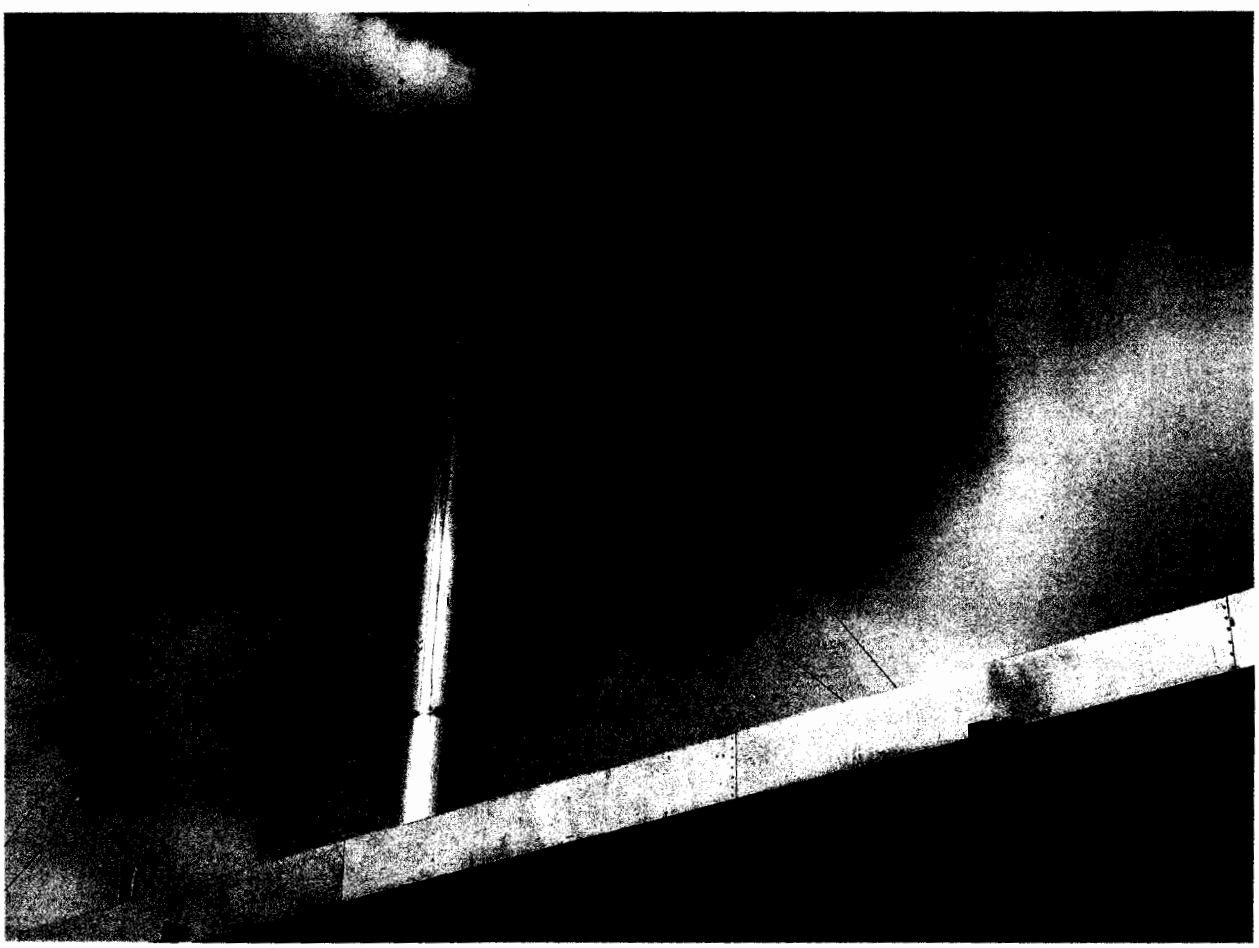
Piping that provides steam for the coils inside of the evaporator unit. The coils heat up the condensate resulting in the water in the condensate being boiled off into the atmosphere.

Photograph No. 10



The facility's evaporator unit and product creosote tanks are surrounded by a approximately 5' concrete wall which provides secondary containment for the tanks.

Photograph No. 11

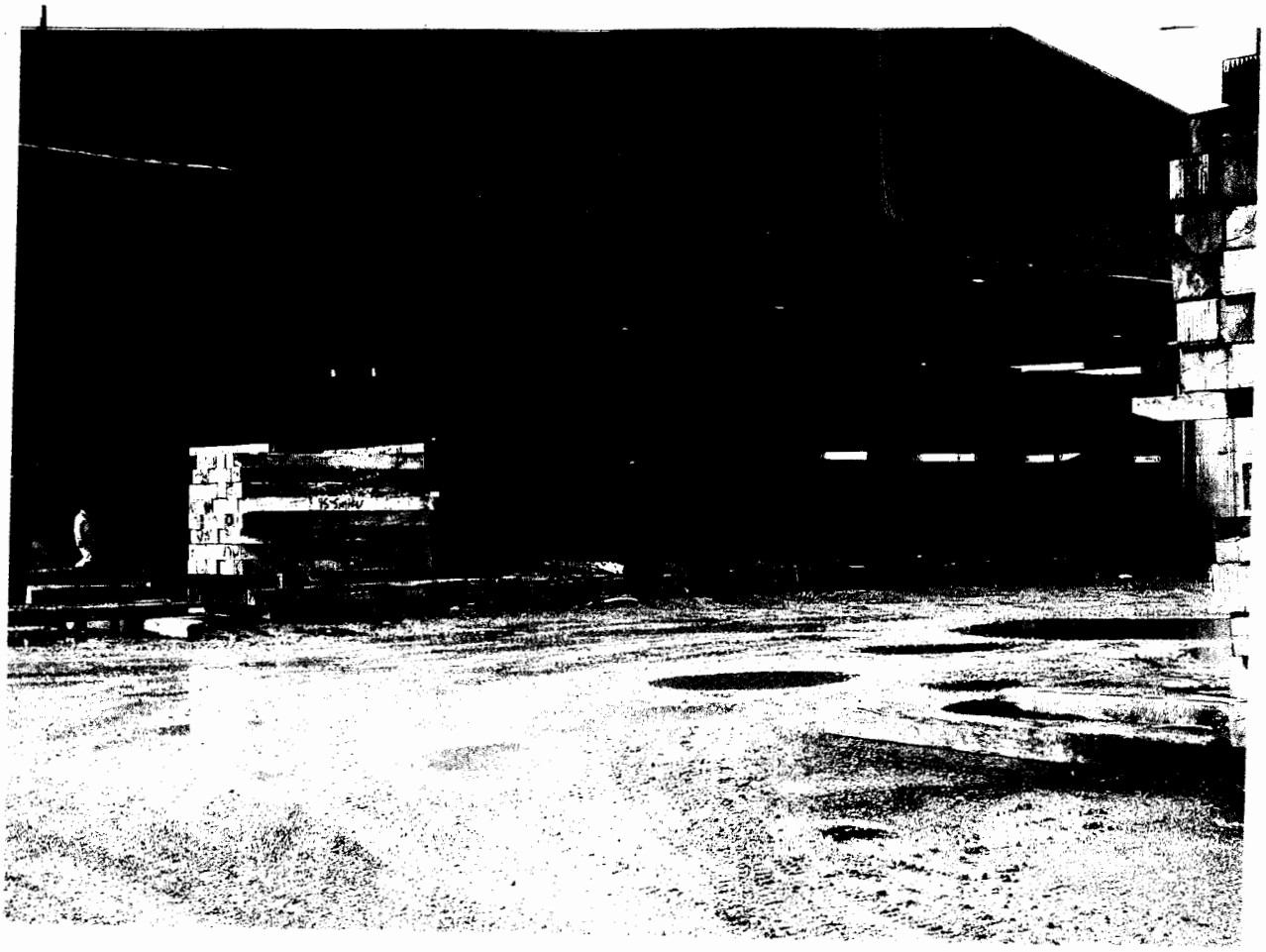


Vent associated with evaporator unit. Water part of condensate is boiled off into the atmosphere. According to Mr. Gentry, VADEQ issued the facility an air permit for this vent.

Photograph No. 12

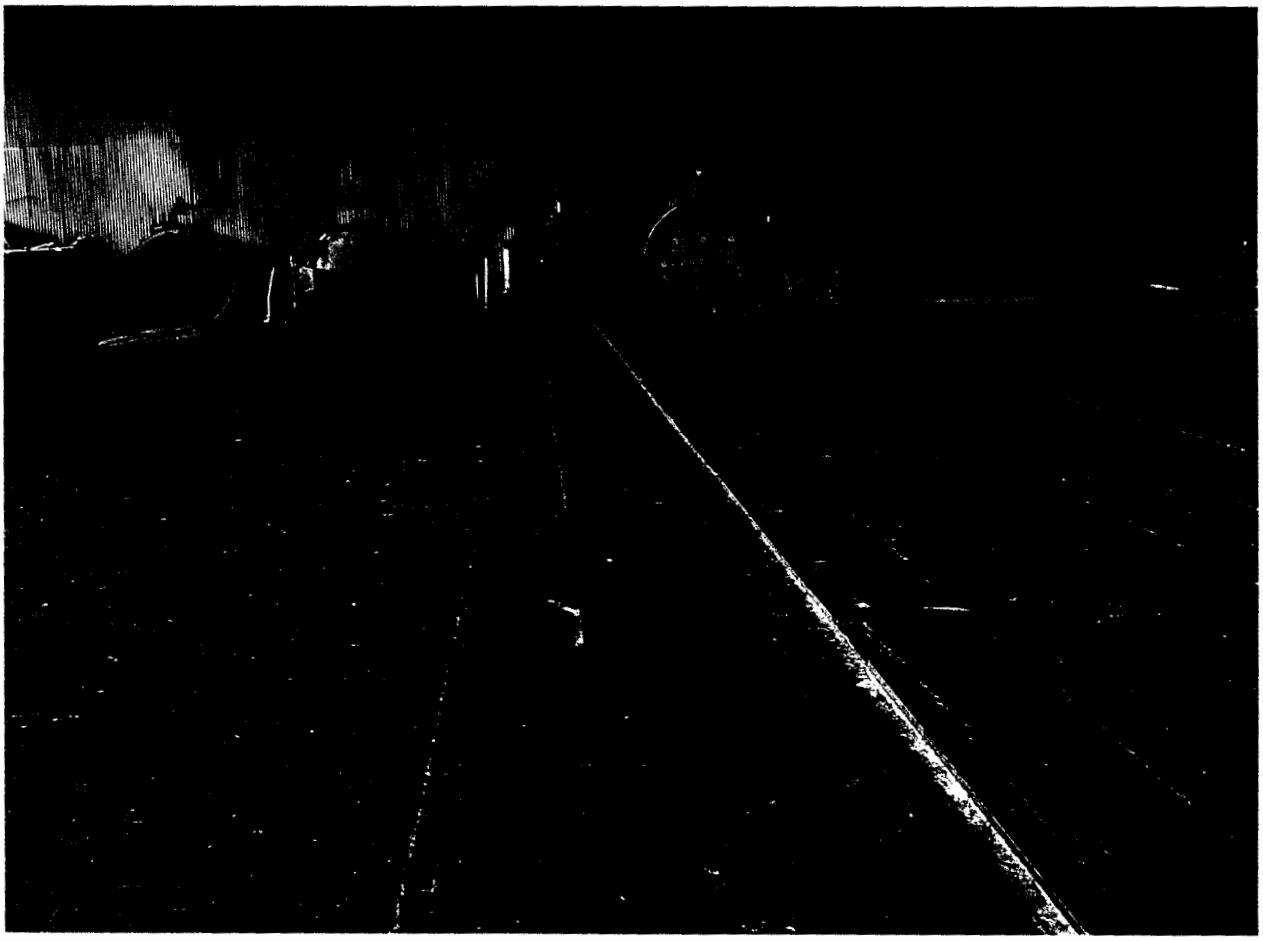
Facility's drip pad. The entire drip pad is covered with a roof and closed on two sides.

Photograph No. 13



Same as description as Photograph No. 12. Different angle of drip pad. Charges of treated wood are stacked at this end of the drip pad for transfer to the storage yard.

Photograph No. 14



Drip Pad. The pad is constructed of concrete with rails embedded in it for the trams. Four of the facility's five treatment cylinders can be seen in this photograph. The drip pad slopes toward the treatment cylinders where any drippage will be captured in sumps.

Photograph No. 15

Picture taken from North-East corner of drip pad facing West. This photographs shows the North end of the drip pad. The joint that runs the length of the photograph is the divider between the actual drip pad and the apron. The drip pad is to the left of the joint and slopes toward the treatment cylinders, while the apron is to the right and slopes toward the storage yard. There is no berm for this end of the drip pad. The inspectors noted that the apron did have a build-up of creosote on it.

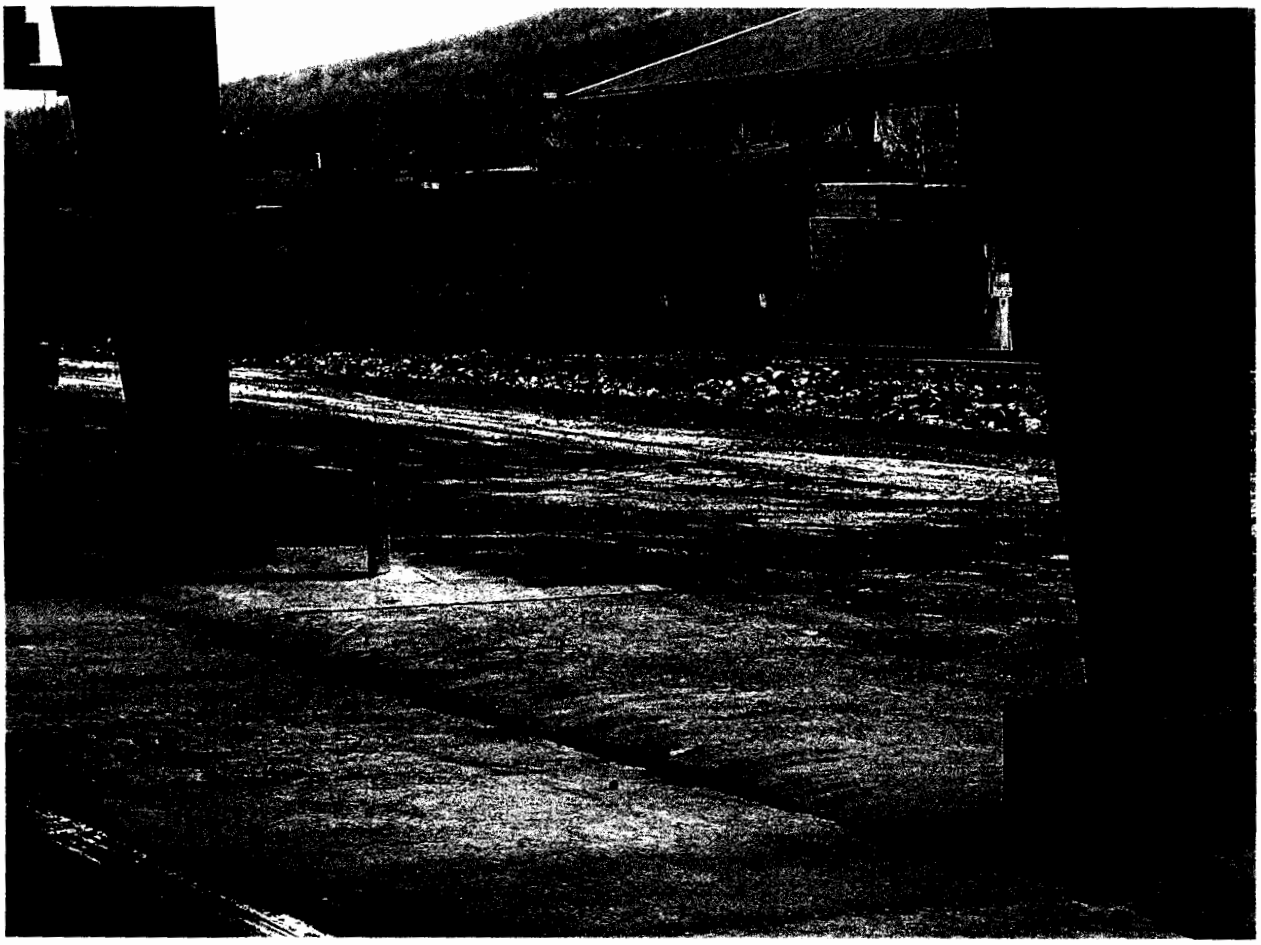
Photograph No. 16

Same description as Photograph No. 15.

Photograph No. 17

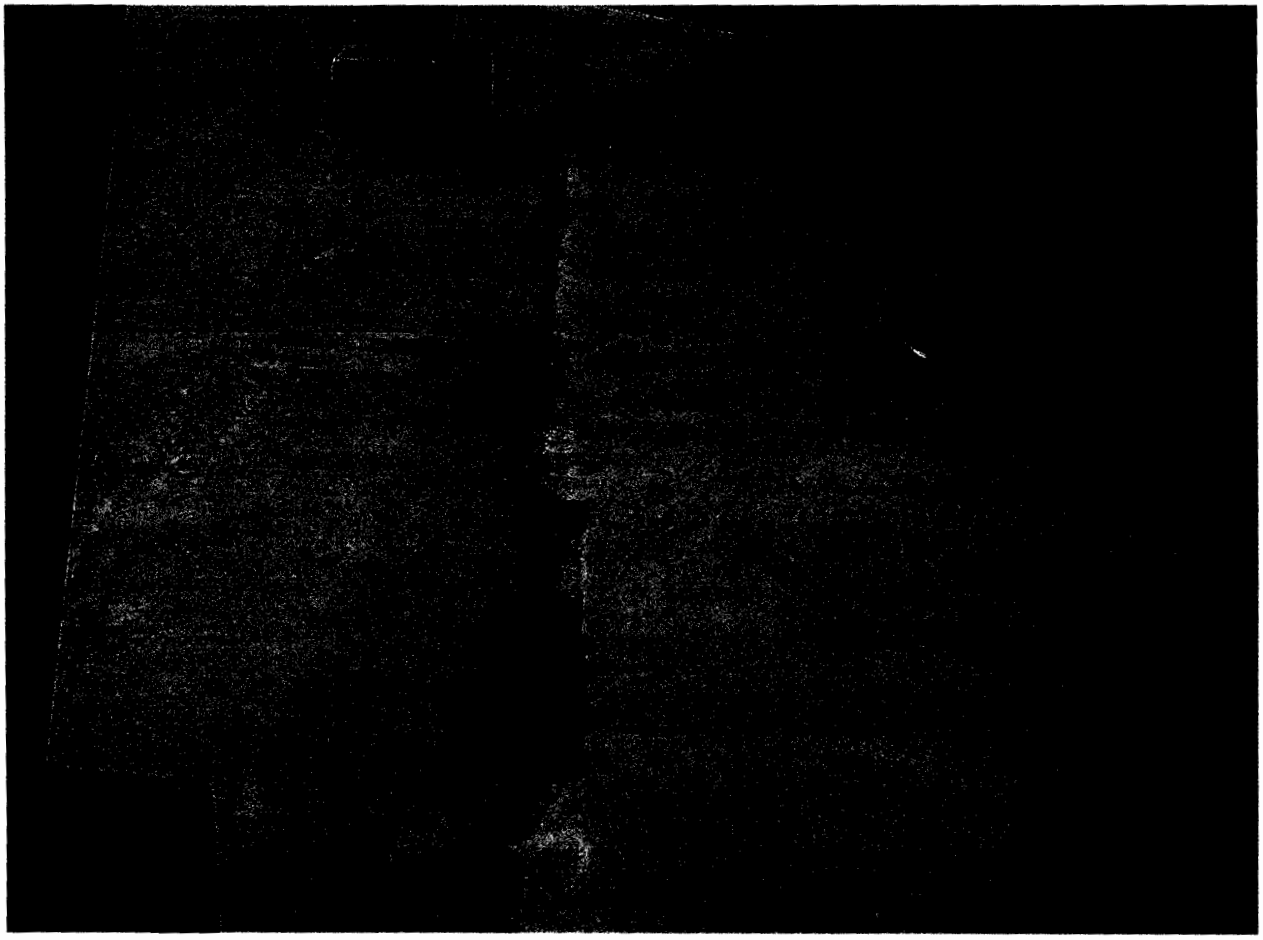
Photograph of drip pad taken from North-East corner facing South-West.

Photograph No. 18



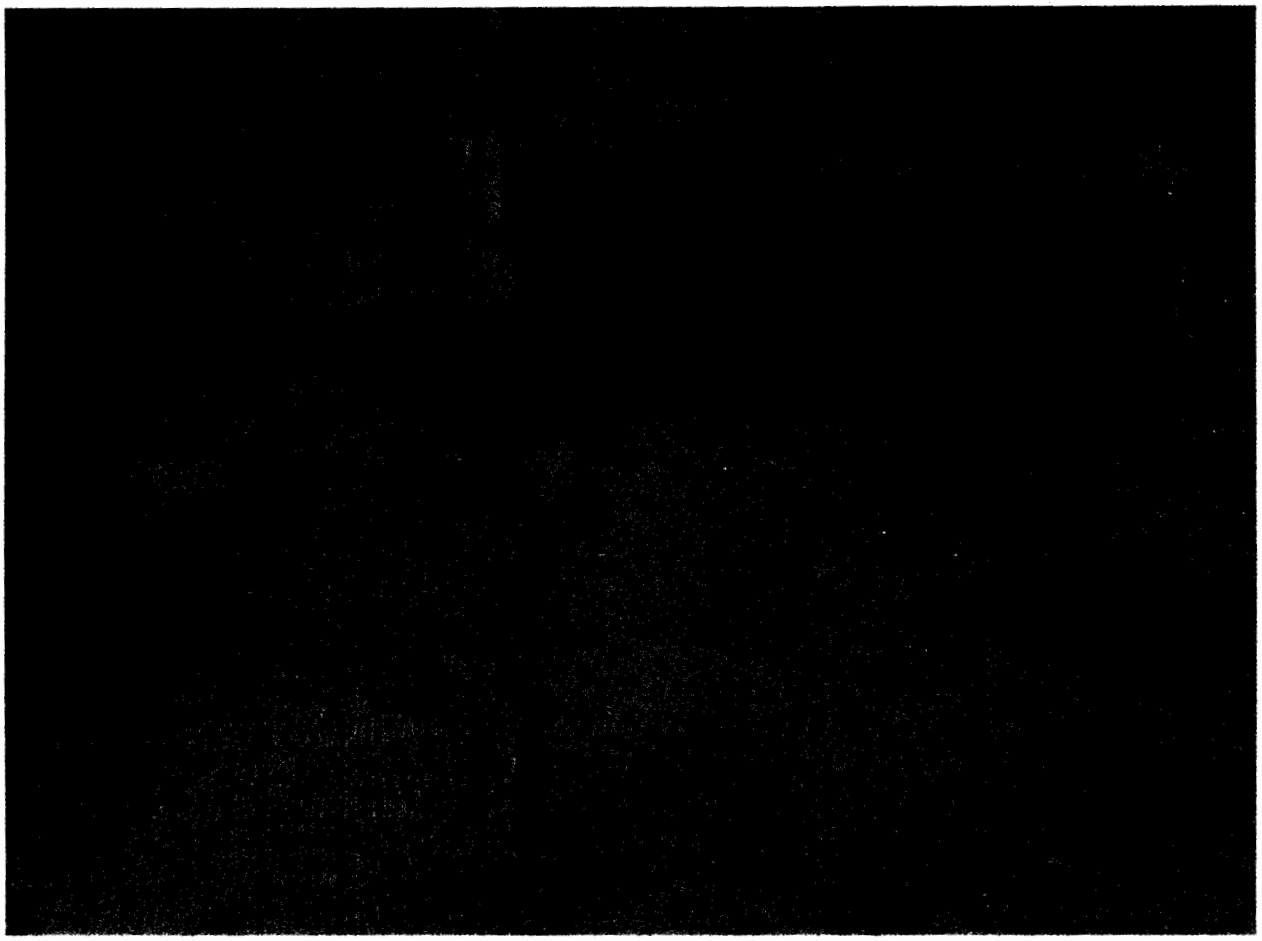
Photograph of Facility drip pad, apron and berm taken from South-East Corner facing North-East. The drip pad ends and the apron/berm begins at the joint closest to the pillars that runs the length of the picture. The berm consists of a slight "hump" where the apron begins to keep preservative from running off of the pad, in addition to keeping water from running onto the pad.

Photograph No. 19



Same description as for Photograph No. 18. Except this photograph was taken from the left pillar shown in Photograph No. 18 facing South side of drip pad.

Photograph No. 20



Same description as for Photograph No. 18. Another view of area where the drip pad meets the apron/berm on the East side of drip pad.

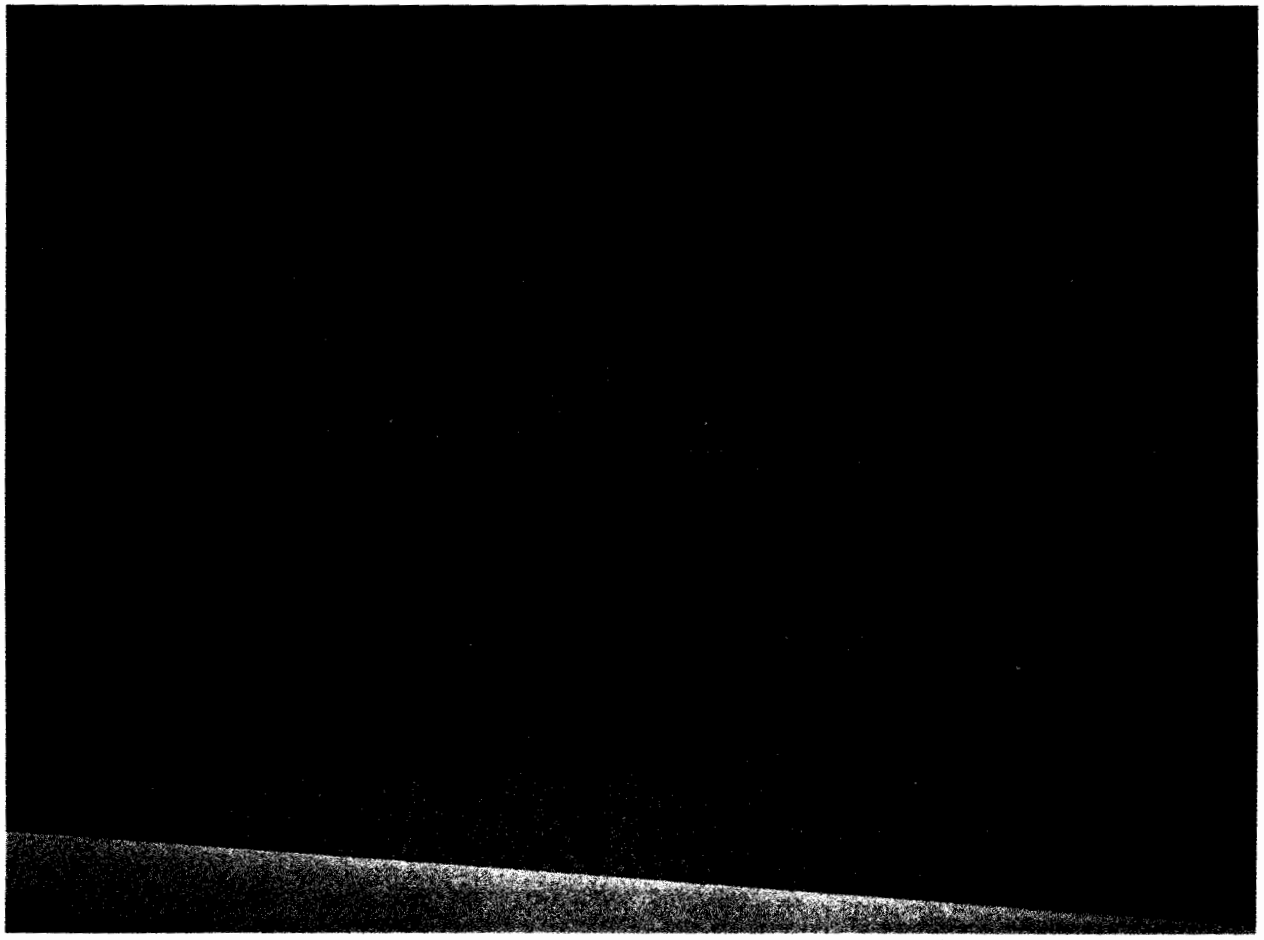
Photograph No. 21

Photograph of apron on East side of drip pad, next to railroad tracks. The apron extends out past the roof that covers the drip pad.

Photograph No. 22

Drip pad. Photograph taken from outside North-East corner of drip pad.

Photograph No. 23

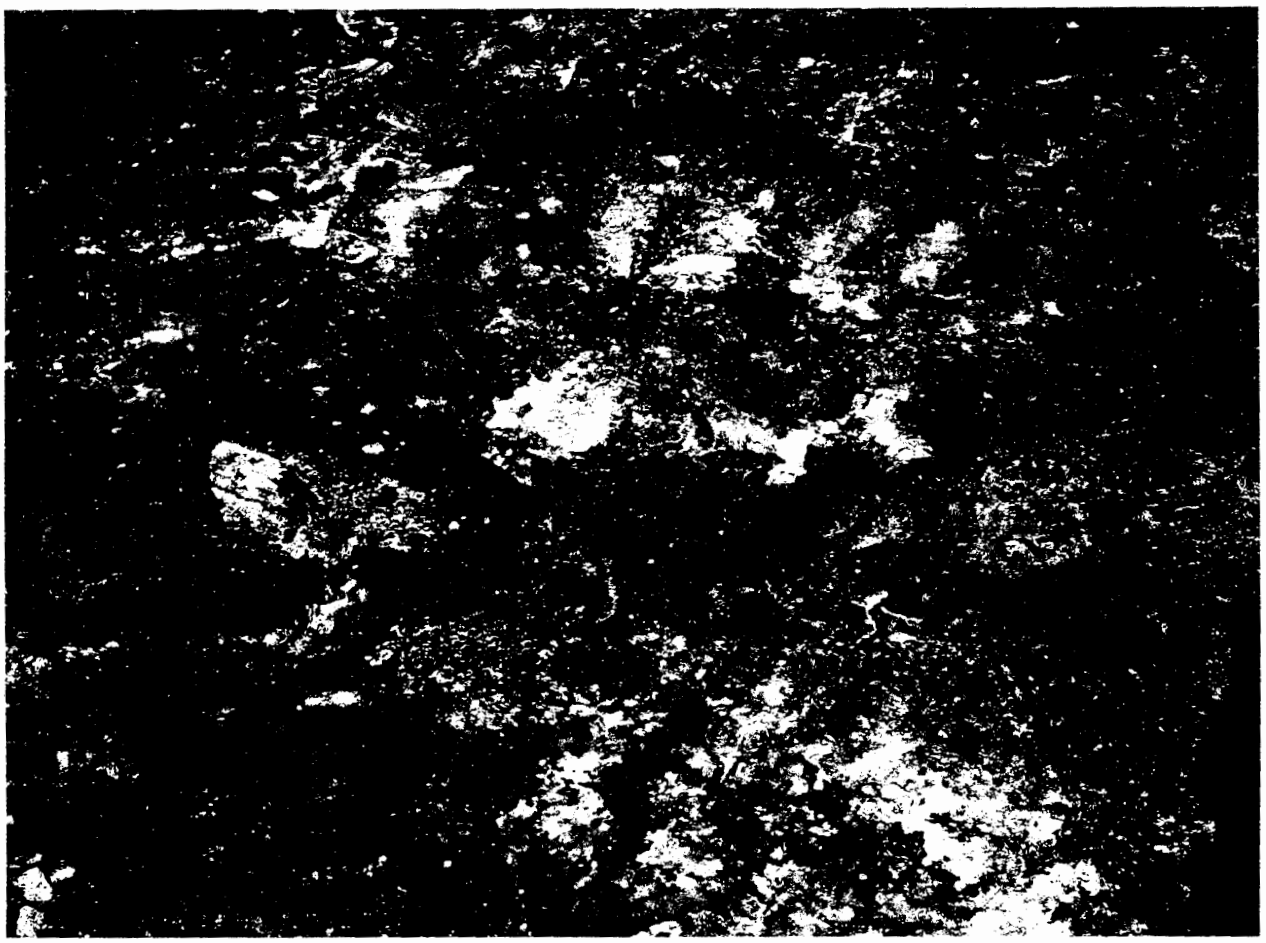


Concrete curbing (4-6") that runs the length of West side of drip pad.

Photograph No. 24

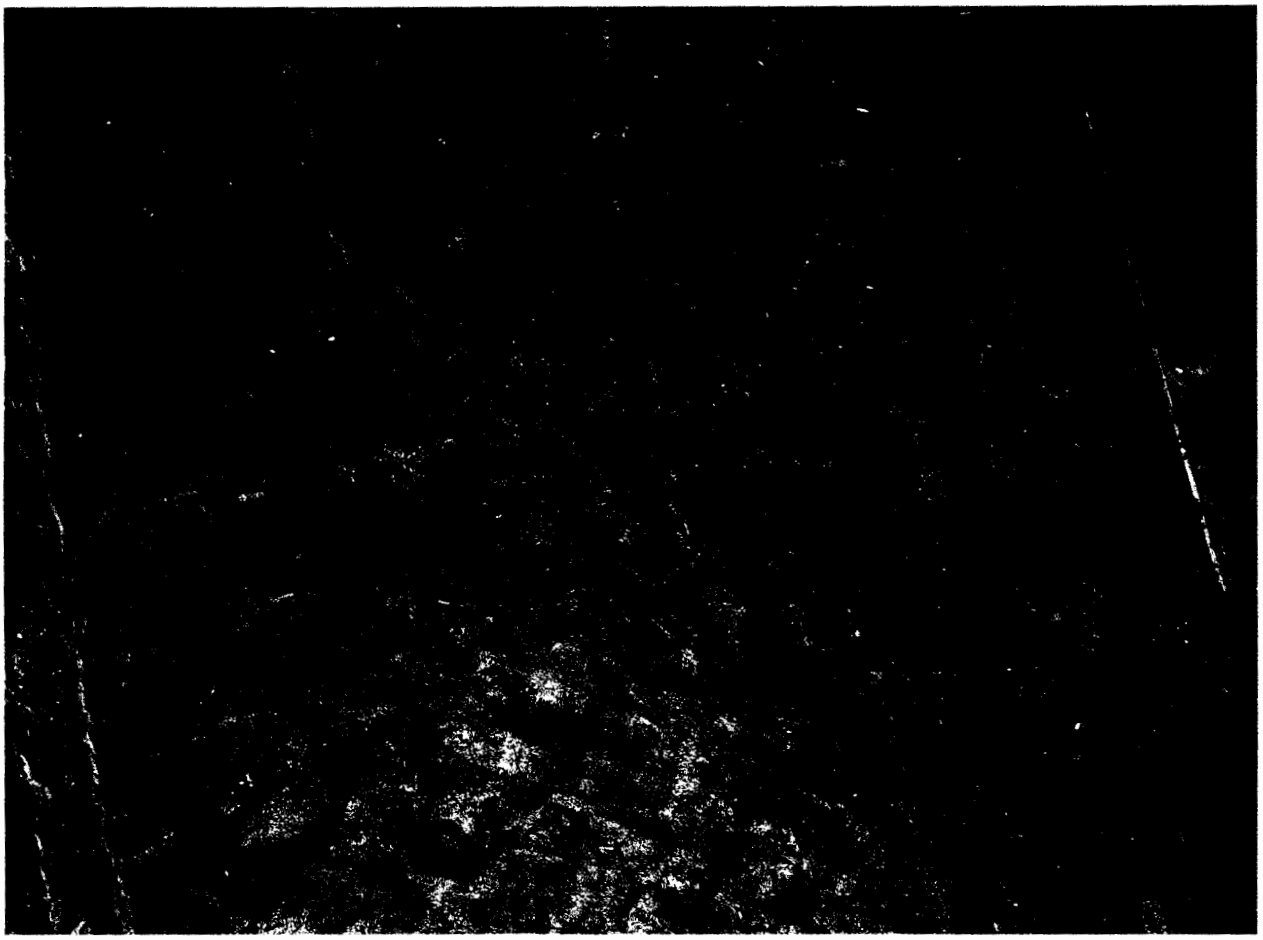
Photograph of North end of drip pad taken from North-West corner of drip pad facing North-East. Drip pad ends and apron begins at the joint that runs the length of photograph. Mr. Gentry stated there is no berm or curb for this end of the drip pad. The drip pad slopes toward the treatment cylinders, which are to the right, and the apron slopes away from the treatment cylinders toward the storage yard, which is to the left.

Photograph No. 25



Surface of drip pad. The inspectors noted there was a slight build-up of creosote on the pad.

Photograph No. 26



Same description as for Photograph No. 25.

Attachment B

Diagram of Drip Pad

Diagram of Drip Pad

* Not Drawn To Scale *